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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,480	09/08/2006	Shimon Edelman	31304	5093

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EXAMINER	
ZHOU, SHUBO	
ART UNIT	PAPER NUMBER
1631	
MAIL DATE	DELIVERY MODE
06/22/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/566,480	EDELMAN ET AL.	
	Examiner	Art Unit	
	SHUBO (Joe) ZHOU	1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 March 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *165-194* is/are pending in the application.

4a) Of the above claim(s) *165-180* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *181-194* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 January 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/22/07,7/3/08,5/28/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Amendments/Status of the Claims

Applicant's election of Group II (claims 181-194) in the response filed 3/31/10 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 1-164 have been previously canceled by applicants.

Claims 165-194 are presently pending.

Claims 165-180 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 3/31/10.

Claims 181-194 are currently under consideration.

Specification

The specification is objected to because of the following including informalities:

The disclosure is objected to because it contains embedded hyperlinks and/or other form or browser-executable code. Such code is present in the specification at least on pages 40 and 43and elsewhere. Applicants are required to delete all the embedded hyperlinks and/or other form of browser-executable codes. See MPEP ' 608.01.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 181-194 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

This rejection is based on the court's decision in *In re Bilski*, and on the Office's recent "Interim Examination Instructions for Evaluating Subject Matter Eligibility Under 35 USC 101," effective August 24, 2009, which is available at the Office's website at http://www.uspto.gov/web/offices/pac/dapp/opla/2009-08-25_interim_101_instructions.pdf.

The instant claims are drawn to a method of generalizing a dataset having a plurality of sequences defined over a lexicon of tokens, the method comprising:

- searching over the dataset for similarity sets, each similarity set comprising a plurality of segments of size L having L-S common tokens and S uncommon tokens, each of said plurality of segments being a portion of a different sequence of the dataset; and
- defining a plurality of equivalence classes corresponding to uncommon tokens of at least one similarity set, thereby generalizing the dataset.

As set forth in the Interim Examination Instructions (pages 4-5), a process claim, to be statutory under 35 USC 101, must pass the machine-or-transformation test (M-or-T test), that is, a claimed process must:

(1) be tied to a particular machine or apparatus; or

(2) particularly transform a particular article to a different state or thing.

In the instant case, the claimed process is not tied to a particular machine or a particular apparatus. As a matter of fact, it is not tied to any machine or apparatus. Furthermore, there is no physical transformation recited and achieved by the claimed process as it merely manipulates data or dataset.

The rejection could be overcome by amendment of the claims to be tied to a particular machine or to recite and achieve a physical transformation by the method steps. Applicant, however, is cautioned against introducing new matter into the claims.

Applicant is also reminded that the court has pointed out that the involvement of the particular machine/apparatus or transformation in a claimed process must not merely be an insignificant extra-solution activity. See Flook, 437 U.S. at 590. Preambles, data-gathering and/or outputting result steps may fall within the category of such insignificant extra-solution activity.

As to claims 187-194, drawn to an apparatus, while they recite the term "apparatus" in the preamble, and such elements as "searcher," "definition unit," "extractor," etc., there is no indication in the claims or description in the specification to suggest that these elements are physical elements. Thus, they could simply be software components.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 181-187 are rejected under 35 U.S.C. 103(a) as being unpatentable over Altschul et al. (J. Mol. Biol. 1990 Oct 5, Vol. 215, pages 403-410).

As set forth above, the claims are drawn to a method for of generalizing a dataset having a plurality of sequences defined over a lexicon of tokens, the method comprising:

- searching over the dataset for similarity sets, each similarity set comprising a plurality of segments of size L having L-S common tokens and S uncommon

tokens, each of said plurality of segments being a portion of a different sequence of the dataset; and

- defining a plurality of equivalence classes corresponding to uncommon tokens of at least one similarity set, thereby generalizing the dataset.

Altschul et al. teach a method, referred to as BLAST, of identifying significant sequence homologies from a dataset including searching for overlaps of segments of the sequences with a plurality of sequences in GenBank or other dataset, applying a statistical analysis to the overlaps and defining significant homologies and displaying the alignments with the probability of E-values. See at least the Abstract on pages 403 and 405-407.

While in these similarity sets of segments obtained by BLAST comprises common tokens such as A, T, G, and C for four different nucleotides, Altschul et al. do not disclose that the sets also comprise uncommon tokens. In light of the indefiniteness of the term "uncommon tokens" for reasons set forth above, it is interpreted that even A, T, G and C could be interpreted as uncommon tokens as they do not represent the common thing, i.e. they represent different, i.e. uncommon, nucleotides.

Furthermore, it would also have been obvious to one having ordinary skill in the art at the time of the invention that variably there would be nucleotides of a DNA sequences which were unresolved, and such unresolved bases would be represented by an "X" in some databases or "N" in others, which are also uncommon tokens. In addition, it would have been well known in the art that a variety of BLAST called BLASTx could be used to compare and search a nucleotide sequence with sequences of proteins in a dataset, where it would be obvious that the tokens for

DNA, A, T, G, and C, and the tokens for all the amino acids are uncommon. (The BLASTx reference will be provided to applicants upon request.)

Altschul et al. also disclose a system and apparatus (computer systems) and computer programs for performing the BLAST analysis. See pages 404-406,

Conclusion

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shubo (Joe) Zhou, whose telephone number is 571-272-0724. The examiner can normally be reached Monday-Friday from 9 A.M. to 5 P.M. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marjorie Moran, can be reached on 571-272-0720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public. For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

/Shubo (Joe) Zhou/

SHUBO (JOE) ZHOU, PH.D.

PRIMARY EXAMINER